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MEMORANDUM

DATE 18 January 1999

TO: David Bennett, WAM, U.S. EPA, Region X

FROM: Michelle Turner, Chemist, WESTON, Seattle
Roger McGinnis, Senior Environmental Chemist, WESTON, Seattle

SUBJECT: Validation of Polychlorinated Biphenyls (Aroclor) Data
Laboratory Batch: K9805863
Site: Duwamish River

WORK ASSIGNMENT NO: 46-23-0JZZ

WORK ORDER NO. 4000-019-038-5200-00

DOC CONTROL NO.: 4000-019-038-AAAK

cc: Bruce Woods, RAP-WAM, U.S. EPA, Region X
Dena Hughes, Site Manager, WESTON, Seattle (memo only)
Kevin Mundell-Jackson, Database Management, WESTON, Seattle

The quality assurance review of twenty sediment samples, laboratory batch K9805863, collected from the Duwamish River has been completed. Samples were analyzed for polychlorinated biphenyls as Aroclors using EPA Method 8082 by Columbia Analytical Services of Kelso, Washington. The samples were numbered:

98354075	98354076	98354077	98354078	98354079
98354080	98354081	98364000	98364001	98364013
98364014	98364015	98364016	98364017	98364018
98364019	98364020	98364021	98364022	98394023

Data Qualifications

The following comments refer to the laboratory performance in meeting the quality control criteria described in the technical specifications of the laboratory subcontract. The review

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QA Review Batch K9805863 (PCB Aroclors)

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follows the format described in the *National Functional Guidelines for Organic Data Review* (EPA OSWER Directive 9240.1-05, February 1994)

1. Timeliness

All samples were extracted 53 days after sample collection, exceeding the 14 day holding time criteria in the Sampling and Analysis Plan. However, prior to extraction, samples were stored frozen, thus extending the holding time. Samples were extracted within the 12 month holding time recommended by PSEP for frozen samples.

2. Initial Calibration

a) Mixed Aroclor 1016/1260 Standard

A six point initial calibration was performed. Calibration factors were calculated for a minimum of five peaks, none of which are common to both Aroclors. The calibration factor percent relative standard deviation (%RSD) was less than 20 percent for all peaks used for quantitation.

b) Individual Aroclor Standards

Calibration factors were calculated from a mid-range standard for the other 5 Aroclors using 3 to 5 peaks.

3. Calibration Verification

Aroclor 1016/1260 calibration verification standards were analyzed every 12 hours using a midrange standard. The calibration factor percent difference was less than 25 percent of the initial calibration value.

4. Retention Time Windows

Retention Time Windows were calculated from initial calibration. Retention times for calibration verification standards were within established windows.

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5. Detection Limits

Instrument detection limits met project required quantitation limits with the following exceptions:

Sample	Compound	QL Goal (µg/Kg)	Reported QL (µg/Kg)
98354076	Aroclor 1254	20	700

Where quantitation limit goals were exceeded, undetected analytes were qualified (UI) to indicate matrix interference.

6. Blanks

a) Laboratory Method Blanks

Laboratory method blank frequency criteria were met.

No target analytes were reported in laboratory method blanks.

b) Field Blanks

No field blanks were associated with this laboratory batch.

7 System Monitoring Compounds (Surrogates)

Surrogate compound percent recovery met quality control criteria for all samples

8. Matrix Spike and Matrix Spike Duplicate

All matrix spike (MS), matrix spike duplicate (MSD) and relative percent difference (RPD) results were within QC limits.

9 Laboratory Control Sample (LCS) Analysis

LCS recovery goals for Aroclors were established in the project Sampling and Analysis Plan at 70 to 130% for sediment Based on conversations with the laboratory, historical

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control chart limits of 26 – 142 for Aroclor 1016 and 40-139 for Aroclor 1260 were also used for data qualification

All LCS percent recoveries met QC guidelines

10. Field Duplicate Analysis

No field duplicates were associated with this SDG.

11. Second Column Confirmation

The Relative Percent Difference (RPD) in reported analyte concentration was less than 35 percent for the primary and confirmation column for all samples

12. Sample Analysis

A cursory review of raw data was performed. All laboratory deliverables were present and complete. A duplicate analysis was performed on 98364001; all RPDs were less than 35 percent. No complications were noted in the case narrative

13. Laboratory Contact

No laboratory contact was required

Data Assessment

Upon consideration of the data qualifications noted above, the data are ACCEPTABLE for use except where flagged with data qualifiers that modify the usefulness of the individual values.

Data Qualifiers

- U - The compound was analyzed for, but was not detected.
- UJ - The compound was analyzed for, but was not detected. The associated quantitation limit is an estimate because quality control criteria were not met

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- J - The analyte was positively identified, but the associated numerical value is an estimated quantity because quality control criteria were not met or because concentrations reported are less than CRDL or lowest calibration standard
- R - Quality control indicates that data are unusable (compound may or may not be present). Resampling and reanalysis are necessary for verification.
- N - Presumptive evidence of presence of material (tentative identification).
- I - Elevated reporting limit due to matrix interference

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Roy F. Weston, Inc
Project: Duwamish River/4000-027-001-2019-38
Sample Matrix: Sediment

Service Request: K9805863
Date Collected: 8/27/98
Date Received: 8/28/98

Polychlorinated Biphenyls (PCBs)

Sample Name	98354075	Units	ug/Kg (ppb)
Lab Code	K9805863-001	Basis	Dry
Test Notes			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Aroclor 1016	EPA 3550B	8082	20	1	10/19/98	10/25/98	ND	
Aroclor 1221	EPA 3550B	8082	40	1	10/19/98	10/25/98	ND	
Aroclor 1232	EPA 3550B	8082	20	1	10/19/98	10/25/98	ND	
Aroclor 1242	EPA 3550B	8082	20	1	10/19/98	10/25/98	ND	
Aroclor 1248	EPA 3550B	8082	20	1	10/19/98	10/25/98	ND	
Aroclor 1254	EPA 3550B	8082	20	1	10/19/98	10/25/98	22	
Aroclor 1260	EPA 3550B	8082	20	1	10/19/98	10/25/98	ND	

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(Signature)

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Analytical Report

Client: Roy F Weston, Inc
Project: Duwamish River/4000-027-001-2019-38
Sample Matrix: Sediment

Service Request: K9805863
Date Collected: 8/27/98
Date Received: 8/28/98

Polychlorinated Biphenyls (PCBs)

Sample Name 98354076 Units ug/Kg (ppb)
Lab Code K9805863-002 Basis Dry
Test Notes

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Aroclor 1016	EPA 3550B	8082	20	1	10/19/98	10/25/98	ND	
Aroclor 1221	EPA 3550B	8082	40	1	10/19/98	10/25/98	ND	
Aroclor 1232	EPA 3550B	8082	20	1	10/19/98	10/25/98	ND	
Aroclor 1242	EPA 3550B	8082	20	1	10/19/98	10/25/98	ND	
Aroclor 1248	EPA 3550B	8082	20	1	10/19/98	10/25/98	ND	
Aroclor 1254	EPA 3550B	8082	700	1	10/19/98	10/25/98	ND	UI
Aroclor 1260	EPA 3550B	8082	2000	100	10/19/98	10/29/98	12000	

B The MRL is elevated because of matrix interferences

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Analytical Report

Client: Roy F Weston, Inc
Project: Duwamish River/4000-027-001-2019-38
Sample Matrix: Sediment

Service Request: K9805863
Date Collected: 8/27/98
Date Received: 8/28/98

Polychlorinated Biphenyls (PCBs)

Sample Name 98354077 **Units** ug/Kg (ppb)
Lab Code K9805863-003 **Basis** Dry
Test Notes

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Aroclor 1016	EPA 3550B	8082	20	1	10/19/98	10/25/98	ND	
Aroclor 1221	EPA 3550B	8082	40	1	10/19/98	10/25/98	ND	
Aroclor 1232	EPA 3550B	8082	20	1	10/19/98	10/25/98	ND	
Aroclor 1242	EPA 3550B	8082	20	1	10/19/98	10/25/98	ND	
Aroclor 1248	EPA 3550B	8082	20	1	10/19/98	10/25/98	ND	
Aroclor 1254	EPA 3550B	8082	20	1	10/19/98	10/25/98	29	
Aroclor 1260	EPA 3550B	8082	20	1	10/19/98	10/25/98	176	

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Analytical Report

Client: Roy F. Weston, Inc
Project: Duwamish River/4000-027-001-2019-38
Sample Matrix: Sediment

Service Request: K9805863
Date Collected: 8/27/98
Date Received: 8/28/98

Polychlorinated Biphenyls (PCBs)

Sample Name 98354078
Lab Code K9805863-004
Test Notes

Units ug/Kg (ppb)
Basis Dry

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Aroclor 1016	EPA 3550B	8082	20	1	10/19/98	10/25/98	ND	
Aroclor 1221	EPA 3550B	8082	40	1	10/19/98	10/25/98	ND	
Aroclor 1232	EPA 3550B	8082	20	1	10/19/98	10/25/98	ND	
Aroclor 1242	EPA 3550B	8082	20	1	10/19/98	10/25/98	ND	
Aroclor 1248	EPA 3550B	8082	20	1	10/19/98	10/25/98	ND	
Aroclor 1254	EPA 3550B	8082	20	1	10/19/98	10/25/98	ND	
Aroclor 1260	EPA 3550B	8082	20	1	10/19/98	10/25/98	35	

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Analytical Report

Client: Roy F Weston, Inc
Project: Duwamish River/4000-027-001-2019-38
Sample Matrix: Sediment

Service Request: K9805863
Date Collected: 8/27/98
Date Received: 8/28/98

Polychlorinated Biphenyls (PCBs)

Sample Name 98354079 Units ug/Kg (ppb)
Lab Code K9805863-005 Basis Dry
Test Notes

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Aroclor 1016	EPA 3550B	8082	20	1	10/19/98	10/25/98	ND	
Aroclor 1221	EPA 3550B	8082	40	1	10/19/98	10/25/98	ND	
Aroclor 1232	EPA 3550B	8082	20	1	10/19/98	10/25/98	ND	
Aroclor 1242	EPA 3550B	8082	20	1	10/19/98	10/25/98	ND	
Aroclor 1248	EPA 3550B	8082	20	1	10/19/98	10/25/98	ND	
Aroclor 1254	EPA 3550B	8082	20	1	10/19/98	10/25/98	ND	
Aroclor 1260	EPA 3550B	8082	20	1	10/19/98	10/25/98	25	

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Analytical Report

Client: Roy F Weston, Inc
Project: Duwamish River/4000-027-001-2019-38
Sample Matrix: Sediment

Service Request: K9805863
Date Collected: 8/27/98
Date Received: 8/28/98

Polychlorinated Biphenyls (PCBs)

Sample Name	98354080	Units	ug/Kg (ppb)
Lab Code	K9805863-006	Basis	Dry
Test Notes			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Aroclor 1016	EPA 3550B	8082	20	1	10/19/98	10/25/98	ND	
Aroclor 1221	EPA 3550B	8082	40	1	10/19/98	10/25/98	ND	
Aroclor 1232	EPA 3550B	8082	20	1	10/19/98	10/25/98	ND	
Aroclor 1242	EPA 3550B	8082	20	1	10/19/98	10/25/98	ND	
Aroclor 1248	EPA 3550B	8082	20	1	10/19/98	10/25/98	ND	
Aroclor 1254	EPA 3550B	8082	20	1	10/19/98	10/25/98	ND	
Aroclor 1260	EPA 3550B	8082	20	1	10/19/98	10/25/98	40	

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Analytical Report

Client Roy F Weston, Inc
Project: Duwamish River/4000-027-001-2019-38
Sample Matrix: Sediment

Service Request: K9805863
Date Collected: 8/27/98
Date Received: 8/28/98

Polychlorinated Biphenyls (PCBs)

Sample Name 98354081
Lab Code K9805863-007
Test Notes

Units ug/Kg (ppb)
Basis Dry

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Aroclor 1016	EPA 3550B	8082	20	1	10/19/98	10/25/98	ND	
Aroclor 1221	EPA 3550B	8082	40	1	10/19/98	10/25/98	ND	
Aroclor 1232	EPA 3550B	8082	20	1	10/19/98	10/25/98	ND	
Aroclor 1242	EPA 3550B	8082	20	1	10/19/98	10/25/98	ND	
Aroclor 1248	EPA 3550B	8082	20	1	10/19/98	10/25/98	ND	
Aroclor 1254	EPA 3550B	8082	20	1	10/19/98	10/25/98	56	
Aroclor 1260	EPA 3550B	8082	20	1	10/19/98	10/25/98	42	

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Analytical Report

Client: Roy F. Weston, Inc
Project: Duwamish River/4000-027-001-2019-38
Sample Matrix: Sediment

Service Request: K9805863
Date Collected: 8/31/98
Date Received: 9/1/98

Polychlorinated Biphenyls (PCBs)

Sample Name 98364013 Units ug/Kg (ppb)
Lab Code K9805863-008 Basis Dry
Test Notes

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Aroclor 1016	EPA 3550B	8082	20	1	10/19/98	10/25/98	ND	
Aroclor 1221	EPA 3550B	8082	40	1	10/19/98	10/25/98	ND	
Aroclor 1232	EPA 3550B	8082	20	1	10/19/98	10/25/98	ND	
Aroclor 1242	EPA 3550B	8082	20	1	10/19/98	10/25/98	ND	
Aroclor 1248	EPA 3550B	8082	20	1	10/19/98	10/25/98	ND	
Aroclor 1254	EPA 3550B	8082	20	1	10/19/98	10/25/98	24	
Aroclor 1260	EPA 3550B	8082	20	1	10/19/98	10/29/98	21	

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Analytical Report

Client. Roy F. Weston, Inc
Project: Duwamish River/4000-027-001-2019-38
Sample Matrix. Sediment

Service Request: K9805863
Date Collected: 8/31/98
Date Received: 9/1/98

Polychlorinated Biphenyls (PCBs)

Sample Name 98364014 **Units** ug/Kg (ppb)
Lab Code K9805863-009 **Basis** Dry
Test Notes

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Aroclor 1016	EPA 3550B	8082	20	1	10/19/98	10/25/98	ND	
Aroclor 1221	EPA 3550B	8082	40	1	10/19/98	10/25/98	ND	
Aroclor 1232	EPA 3550B	8082	20	1	10/19/98	10/25/98	ND	
Aroclor 1242	EPA 3550B	8082	20	1	10/19/98	10/25/98	ND	
Aroclor 1248	EPA 3550B	8082	20	1	10/19/98	10/25/98	ND	
Aroclor 1254	EPA 3550B	8082	20	1	10/19/98	10/25/98	46	
Aroclor 1260	EPA 3550B	8082	20	1	10/19/98	10/25/98	52	

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Analytical Report

Client: Roy F Weston, Inc
Project: Duwamish River/4000-027-001-2019-38
Sample Matrix: Sediment

Service Request: K9805863
Date Collected: 8/31/98
Date Received: 9/1/98

Polychlorinated Biphenyls (PCBs)

Sample Name 98364015 Units ug/Kg (ppb)
Lab Code K9805863-010 Basis Dry
Test Notes

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Aroclor 1016	EPA 3550B	8082	20	1	10/19/98	10/25/98	ND	
Aroclor 1221	EPA 3550B	8082	40	1	10/19/98	10/25/98	ND	
Aroclor 1232	EPA 3550B	8082	20	1	10/19/98	10/25/98	ND	
Aroclor 1242	EPA 3550B	8082	20	1	10/19/98	10/25/98	ND	
Aroclor 1248	EPA 3550B	8082	20	1	10/19/98	10/25/98	ND	
Aroclor 1254	EPA 3550B	8082	20	1	10/19/98	10/25/98	82	
Aroclor 1260	EPA 3550B	8082	20	1	10/19/98	10/25/98	69	

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Analytical Report

Client: Roy F Weston, Inc
Project: Duwamish River/4000-027-001-2019-38
Sample Matrix: Sediment

Service Request: K9805863
Date Collected: 8/31/98
Date Received: 9/1/98

Polychlorinated Biphenyls (PCBs)

Sample Name 98364016 Units ug/Kg (ppb)
Lab Code K9805863-011 Basis Dry
Test Notes

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Aroclor 1016	EPA 3550B	8082	20	1	10/19/98	10/30/98	ND	
Aroclor 1221	EPA 3550B	8082	40	1	10/19/98	10/30/98	ND	
Aroclor 1232	EPA 3550B	8082	20	1	10/19/98	10/30/98	ND	
Aroclor 1242	EPA 3550B	8082	20	1	10/19/98	10/30/98	ND	
Aroclor 1248	EPA 3550B	8082	20	1	10/19/98	10/30/98	ND	
Aroclor 1254	EPA 3550B	8082	20	1	10/19/98	10/30/98	24	
Aroclor 1260	EPA 3550B	8082	20	1	10/19/98	10/30/98	ND	

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Roy F Weston, Inc
Project: Duwamish River/4000-027-001-2019-38
Sample Matrix: Sediment

Service Request: K9805863
Date Collected: 8/31/98
Date Received: 9/1/98

Polychlorinated Biphenyls (PCBs)

Sample Name 98364017 Units ug/Kg (ppb)
Lab Code K9805863-012 Basis Dry
Test Notes

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Aroclor 1016	EPA 3550B	8082	20	1	10/19/98	10/25/98	ND	
Aroclor 1221	EPA 3550B	8082	40	1	10/19/98	10/25/98	ND	
Aroclor 1232	EPA 3550B	8082	20	1	10/19/98	10/25/98	ND	
Aroclor 1242	EPA 3550B	8082	20	1	10/19/98	10/25/98	ND	
Aroclor 1248	EPA 3550B	8082	20	1	10/19/98	10/25/98	ND	
Aroclor 1254	EPA 3550B	8082	20	1	10/19/98	10/25/98	64	
Aroclor 1260	EPA 3550B	8082	20	1	10/19/98	10/25/98	49	

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Roy F Weston, Inc
Project: Duwamish River/4000-027-001-2019-38
Sample Matrix: Sediment

Service Request: K9805863
Date Collected: 8/31/98
Date Received: 9/1/98

Polychlorinated Biphenyls (PCBs)

Sample Name 98364018 **Units** ug/Kg (ppb)
Lab Code K9805863-013 **Basis** Dry
Test Notes

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Aroclor 1016	EPA 3550B	8082	20	1	10/19/98	10/25/98	ND	
Aroclor 1221	EPA 3550B	8082	40	1	10/19/98	10/25/98	ND	
Aroclor 1232	EPA 3550B	8082	20	1	10/19/98	10/25/98	ND	
Aroclor 1242	EPA 3550B	8082	20	1	10/19/98	10/25/98	ND	
Aroclor 1248	EPA 3550B	8082	20	1	10/19/98	10/25/98	ND	
Aroclor 1254	EPA 3550B	8082	20	1	10/19/98	10/25/98	20	
Aroclor 1260	EPA 3550B	8082	20	1	10/19/98	10/25/98	ND	

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Roy F Weston, Inc
Project: Duwamish River/4000-027-001-2019-38
Sample Matrix: Sediment

Service Request: K9805863
Date Collected: 8/31/98
Date Received: 9/1/98

Polychlorinated Biphenyls (PCBs)

Sample Name 98364019 **Units** ug/Kg (ppb)
Lab Code K9805863-014 **Basis** Dry
Test Notes

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Aroclor 1016	EPA 3550B	8082	20	1	10/19/98	10/25/98	ND	
Aroclor 1221	EPA 3550B	8082	40	1	10/19/98	10/25/98	ND	
Aroclor 1232	EPA 3550B	8082	20	1	10/19/98	10/25/98	ND	
Aroclor 1242	EPA 3550B	8082	20	1	10/19/98	10/25/98	ND	
Aroclor 1248	EPA 3550B	8082	20	1	10/19/98	10/25/98	ND	
Aroclor 1254	EPA 3550B	8082	20	1	10/19/98	10/25/98	149	
Aroclor 1260	EPA 3550B	8082	20	1	10/19/98	10/29/98	70	

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Roy F Weston, Inc
Project: Duwamish River/4000-027-001-2019-38
Sample Matrix: Sediment

Service Request: K9805863
Date Collected: 8/31/98
Date Received: 9/1/98

Polychlorinated Biphenyls (PCBs)

Sample Name	98364020	Units	ug/Kg (ppb)
Lab Code	K9805863-015	Basis	Dry
Test Notes			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Aroclor 1016	EPA 3550B	8082	20	1	10/19/98	10/25/98	ND	
Aroclor 1221	EPA 3550B	8082	40	1	10/19/98	10/25/98	ND	
Aroclor 1232	EPA 3550B	8082	20	1	10/19/98	10/25/98	ND	
Aroclor 1242	EPA 3550B	8082	20	1	10/19/98	10/25/98	ND	
Aroclor 1248	EPA 3550B	8082	20	1	10/19/98	10/25/98	ND	
Aroclor 1254	EPA 3550B	8082	20	1	10/19/98	10/25/98	25	
Aroclor 1260	EPA 3550B	8082	20	1	10/19/98	10/25/98	ND	

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Roy F Weston, Inc
Project: Duwamish River/4000-027-001-2019-38
Sample Matrix: Sediment

Service Request: K9805863
Date Collected: 8/31/98
Date Received: 9/1/98

Polychlorinated Biphenyls (PCBs)

Sample Name	98364021	Units	ug/Kg (ppb)
Lab Code	K9805863-016	Basis	Dry
Test Notes			

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Aroclor 1016	EPA 3550B	8082	20	1	10/19/98	10/25/98	ND	
Aroclor 1221	EPA 3550B	8082	40	1	10/19/98	10/25/98	ND	
Aroclor 1232	EPA 3550B	8082	20	1	10/19/98	10/25/98	ND	
Aroclor 1242	EPA 3550B	8082	200	10	10/19/98	10/29/98	2400	
Aroclor 1248	EPA 3550B	8082	20	1	10/19/98	10/25/98	ND	
Aroclor 1254	EPA 3550B	8082	20	1	10/19/98	10/25/98	1330	
Aroclor 1260	EPA 3550B	8082	20	1	10/19/98	10/25/98	977	

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Roy F. Weston, Inc
Project: Duwamish River/4000-027-001-2019-38
Sample Matrix: Sediment

Service Request: K9805863
Date Collected: 8/31/98
Date Received: 9/1/98

Polychlorinated Biphenyls (PCBs)

Sample Name 98364022 Units ug/Kg (ppb)
Lab Code K9805863-017 Basis Dry
Test Notes

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Aroclor 1016	EPA 3550B	8082	20	1	10/19/98	10/26/98	ND	
Aroclor 1221	EPA 3550B	8082	40	1	10/19/98	10/26/98	ND	
Aroclor 1232	EPA 3550B	8082	20	1	10/19/98	10/26/98	ND	
Aroclor 1242	EPA 3550B	8082	20	1	10/19/98	10/26/98	92	
Aroclor 1248	EPA 3550B	8082	20	1	10/19/98	10/26/98	ND	
Aroclor 1254	EPA 3550B	8082	20	1	10/19/98	10/26/98	63	
Aroclor 1260	EPA 3550B	8082	20	1	10/19/98	10/26/98	32	

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Roy F Weston, Inc
Project: Duwamish River/4000-027-001-2019-38
Sample Matrix: Sediment

Service Request: K9805863
Date Collected: 8/31/98
Date Received: 9/1/98

Polychlorinated Biphenyls (PCBs)

Sample Name 98364023 Units ug/Kg (ppb)
Lab Code K9805863-018 Basis Dry
Test Notes

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Aroclor 1016	EPA 3550B	8082	20	1	10/19/98	10/26/98	ND	
Aroclor 1221	EPA 3550B	8082	40	1	10/19/98	10/26/98	ND	
Aroclor 1232	EPA 3550B	8082	20	1	10/19/98	10/26/98	ND	
Aroclor 1242	EPA 3550B	8082	20	1	10/19/98	10/26/98	ND	
Aroclor 1248	EPA 3550B	8082	20	1	10/19/98	10/26/98	ND	
Aroclor 1254	EPA 3550B	8082	20	1	10/19/98	10/26/98	46	
Aroclor 1260	EPA 3550B	8082	20	1	10/19/98	10/26/98	53	

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Roy F Weston, Inc
Project: Duwamish River/4000-027-001-2019-38
Sample Matrix: Sediment

Service Request: K9805863
Date Collected: 8/31/98
Date Received: 9/1/98

Polychlorinated Biphenyls (PCBs)

Sample Name 98364000 Units ug/Kg (ppb)
Lab Code K9805863-019 Basis Dry
Test Notes

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Aroclor 1016	EPA 3550B	8082	20	1	10/19/98	10/26/98	ND	
Aroclor 1221	EPA 3550B	8082	40	1	10/19/98	10/26/98	ND	
Aroclor 1232	EPA 3550B	8082	20	1	10/19/98	10/26/98	ND	
Aroclor 1242	EPA 3550B	8082	20	1	10/19/98	10/26/98	ND	
Aroclor 1248	EPA 3550B	8082	20	1	10/19/98	10/26/98	ND	
Aroclor 1254	EPA 3550B	8082	20	1	10/19/98	10/26/98	31	
Aroclor 1260	EPA 3550B	8082	20	1	10/19/98	10/26/98	29	

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Roy F Weston, Inc
Project: Duwamish River/4000-027-001-2019-38
Sample Matrix: Sediment

Service Request: K9805863
Date Collected: 8/31/98
Date Received: 9/1/98

Polychlorinated Biphenyls (PCBs)

Sample Name 98364001 Units ug/Kg (ppb)
Lab Code K9805863-020 Basis Dry
Test Notes

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Aroclor 1016	EPA 3550B	8082	20	1	10/19/98	10/26/98	ND	
Aroclor 1221	EPA 3550B	8082	40	1	10/19/98	10/26/98	ND	
Aroclor 1232	EPA 3550B	8082	20	1	10/19/98	10/26/98	ND	
Aroclor 1242	EPA 3550B	8082	20	1	10/19/98	10/26/98	22	
Aroclor 1248	EPA 3550B	8082	20	1	10/19/98	10/26/98	ND	
Aroclor 1254	EPA 3550B	8082	20	1	10/19/98	10/26/98	59	
Aroclor 1260	EPA 3550B	8082	20	1	10/19/98	10/29/98	58	

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